

THE AILANTHUS SILKWORM.

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Amongst the large number of foreign silkworm moths, which it is possible to raise in captivity, *Philosamia cynthia*, or the Ailanthus worm is undoubtedly the easiest to rear.

This beautiful insect, whose original home is Java, was imported into the Northern States of America from China during 1861. Since that time it has continued to breed in large numbers, so that it may now be found fairly plentifully wherever the Ailanthus tree (*Ailanthus glandulosa*) occurs. But during the course of acclimatization certain changes have taken place, which have now rendered it more or less distinct from its original Asiatic ancestors. To distinguish it from its more distant relations, it is now frequently called *Philosamia cynthia advena*, signifying the new-comer.

The colors of this handsome insect are chiefly in tones of olive green or olive brown, carefully blended with soft tones of lilac pink and white. The body, which is thickly covered with silky fur and beautifully mottled, is small in comparison with the large and beautifully-shaped wings which measure between 5 and 6 inches across. This is a peculiar characteristic present in the majority of wild silk moths.

People who are in any way interested in the aesthetic side of nature, cannot fail to find a great deal of charm and interest in endeavoring to rear this delicate species. The cocoons may be bought during the Spring, usually at a comparatively low figure, and these evolve their moths during June or sometimes earlier if they are forced; in some cases, however, moths do not emerge before August, this usually depending on the locality from whence the cocoons were taken. I have found that cynthia moths, generally speaking, make their exit from their cocoons between 6 and 7 o'clock in the evening, some continue to emerge until 9 o'clock, but these times are greatly influenced by the surrounding conditions, which should be comparatively warm with a moist atmosphere. Prior to emergence, a small amount of liquid is exuded from the head of the moth. This, in most cases, would help to dissolve the gum which binds the silken threads together, and so help the moth to escape—but in the case of cynthia, although provided, this has little material use, for the cocoon already possesses an exit hole previously constructed by the caterpillar.

An interesting fact is that this aperture, to which I have just alluded, is only just sufficiently large to allow the undeveloped insect to squeeze through; so that during the operation of emergence, the wings, which at this period are exceedingly small, and in texture resembling little pieces of felt, are held by the sides of the cocoon, only being freed when the whole of the body has been allowed to pass out; in this way they are stretched already to twice their original length. The scales and long silken hairs with which they are clothed, are attached in a similar way to that in which the tiles are attached to a roof, and it is only due to this peculiar structure that the wings are not robbed of any of their beauty during this perilous moment.

When the insect is free it hastily climbs in search of a suitable position where it may rest whilst the development of its wings takes place. This position is not infrequently the underside of the cocoon.

The wings grow extraordinarily quickly once the blood has penetrated the main vein; it seems possible to almost see the rest of the wing unfurling with the naked eye, in fact the whole development takes little longer than 25 minutes. If development does not take place immediately after emergence, the wings, owing to the loss of their power of elasticity, are incapable of any further growth.

Cynthia moths possess a very characteristic odor, which can be easily detected within a very short distance, and which recalls the smell present in the young leaves and shoots of the *Ailanthus*.

When full development has taken place, these little creatures present a truly pretty picture. Their beautiful wings, together with their dainty little feet which resemble pieces of mottled velvet, are sufficient to make a great impression on one's imagination.

They show no resentment if carefully handled, and will immediately climb upon any article which is allowed to come in contact with their antennae or feelers, grasping it in the first place with their front legs and eventually taking hold with all six.

During the day they fly but little, and only break the monotony by the extraordinarily slow and lazy way in which they open and close their wings, suggesting the slow motion of a fan. This strange characteristic seems to be almost exclusively confined to this type of moth.

The females rarely fly during the first night, usually remaining in the same position as that which they took up for the growing

of their wings. They show no resentment, however, to the continual approaches of the opposite sex, who usually locate their partners between the hours of dusk and midnight, and remaining with them until approximately noon the following day, unless previously disturbed.

The males of this variety are exceedingly active during the hours of 7 and 8 in the evening. They may be seen, one by one, to commence an extraordinary fluttering motion with their wings and after this has lasted for four or five minutes, they will immediately release themselves from that to which they have been clinging and take wing in the open air. This is a beautiful sight, as the flight of these creatures is vastly different to that which is generally associated with moths—being slow and resembling the wing strokes of a butterfly rather than the sudden spontaneous darting movements of moths.

The eggs of this species which are approximately $1/16$ of an inch across, are oval and when first deposited are pale cream, eventually, as the maturation of the grub inside proceeds, turning to a green-gray color. They are laid in little masses, or dotted in perfect lines around twigs.

In this country the little caterpillars almost invariably hatch on the fourteenth or fifteenth day. They are at first yellow and appear to be speckled all over. They will eat privet and lilac and thrive well, but they greatly prefer the beans of their native tree the *Ailanthus*.

I have found that those which have been fed on privet take exactly twice as long as the others to grow to maturity. For the first half of their lives they live and feed together, always observing a formation, which consists of their heads always being pointed in the direction of the outside edges of the leaf.

They change their skins every 7 or 14 days, and as they grow they vary in color from orange to white. During this latter stage they become covered with a thick wax-like powder which appears to be excreted by the tubicles during the first few days after they cast off skins. During the last stages they become exceedingly handsome, the predominant color is a very pale green, almost white, and the legs are beautifully ornamented with markings of yellow, black and shades of rich ultra-blue. The tubicles which remain almost the whole of the time covered with the peculiar powder are actually of a pale ultramarine color. The head is pale apple green.

When the time arrives for the caterpillar to spin its cocoon, the colors alter slightly, sometimes taking on a creamy hue, and the worm which stops feeding soon commences to spin a girdle of silk around the stalk of the leaf which it has selected for the construction of its cocoon. In some cases, not being content with the making of a simple girdle around the leaf stalk, the little creature will go so far as to spin a complete girdle around the whole stalk as far as the main stem of the tree. In the case of the *Ailanthus*, the leaves are attached to a central stalk which may be as long as $2\frac{1}{2}$ to 3 feet and half of this space is frequently covered with silk, so that during the fall, the silken band prevents the cocoon from being disengaged from the tree, and so rescues it from the perils which it would have to face, should it have fallen to the ground.

Note on *Lixus fimbriolatus* Boh.—June 4, 1905, the writer and later others collected this species at Chevy Chase, Md. Recently Mrs. D. H. Blake captured a pair at Riverdale, Md., *in copula* on *Helianthus stramosus*, probably the preferred larval food plant. The name was not included in the Ulke list of the Coleoptera of the District of Columbia, published in 1902. Comparison of a female from Chevy Chase with western material does not reveal specific or even varietal characters. This specimen is, however, smaller, much more slender and more depressed. Length, 11.0 mm.; width, 2.4 mm.; length of rostrum, ♀, 3.0 mm. A large specimen from Topeka, Kans. (Popenoe), measures 17.5 mm. long, 4.9 mm. wide, rostrum, ♀, 6.5 mm.—F. H. CHITTENDEN, Washington, D. C.

***Apteromechus microstictus* Fall.**—Unexplainably, in preparing the manuscript of my article published in the April number of this BULLETIN the habitat and type locality of this species were omitted. The species is known to me only from Florida, the five examples in my collection being from St. Petersburg, Dune-din, Miami (Knull), "L. Poinsett 1.5" (Schwarz) and Marion County. The type is from the first named locality and was collected by the writer April 6, 1923. The closely allied *A. ferratus* occurs also in Florida, and I have representatives of it from Miami and Paradise Key.—H. C. FALL.